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Manual Motor Controller / Circuit Breaker for Equipment thermal-magnetic, 1 pole



### Description

- Thermal-magnetic circuit breaker
- High short circuit performance
- Availability of AC and DC in the same frame size
- DIN-Rail Mounting

### Standards

- Approval Reference Type: AS168X
- IEC 60934
- UL508, UL1077
- CSA C22.2

### Applications

- Industrial appliances

### Weblinks

[pdf datasheet](#), [html-datasheet](#), [General Product Information](#), [Approvals](#), [CE declaration of conformity](#), [RoHS](#), [CHINA-RoHS](#), [REACH](#), [Distributor-Stock-Check](#), [Detailed request for product](#), [Product News](#)

### Technical Data

#### General data

|  |   |
|--|---|
| Rated Voltage AC                             | IEC : 240 V; 50/60 Hz<br>UL/CSA : 277 V; 50/60 Hz   |
| Rated Voltage DC                             | 65 V  |
| Rated current                                | 0.5 - 52 A , see approbations   |
| Conditional short circuit capacity IEC 60934 | Icn: AC 240 V / DC 65 V: 5 kA (no fuse)   |
| Conditional short circuit capacity UL 1077   | Icn: AC 277 V: 10 kA (with fuse class H/J, 4x rated current (min. 15 A))<br>Icn: AC 125 V: 10 kA (no fuse)<br>Icn: AC 277 V: 5 kA (no fuse)<br>Icn: DC 65 V: 2 kA (no fuse) |
| Conditional short circuit capacity UL 508    | Icn: AC 277 V: 5 kA (no fuse)   |
| Degree of Protection                         | from front side IP 40 acc. to IEC 60529   |
| Lifetime                                     | 1 x lr : 6000 switching cycles  |
| Dielectric Strength                          | 50Hz: > 2kV<br>Impulse 1.2/50 $\mu$ s   |
| Vibration Resistance                         | $\pm$ 0.75 mm @ 5 - 57 Hz<br>acc. to IEC 60068-2-6, test Fc<br>10 G @ 57 - 500 Hz<br>acc. to IEC 60068-2-6, test Fc   |
| Insulation Resistance                        | 250/440 VAC > 5 M $\Omega$  |
| Shock Resistance                             | 25 G / 10ms<br>acc. to IEC 60068-2-27, test Ea  |
| Ambient temperature                          | -20°C to 60°C   |
| Weight                                       | 100 - 130g  |

#### Tripping Type

Positively trip free

#### Actuation Type

Manual ON/OFF

#### Permissible wire cross section

1.5 - 25 mm<sup>2</sup> / 16 - 4 AWG

#### Switched neutral

##### Rated Voltage

AC 277 V

##### Rated current

AC/DC 65 A

##### Function

The switched neutral closes with manual closure of the poles and opens automatically with thermal magnetic tripping of the poles.

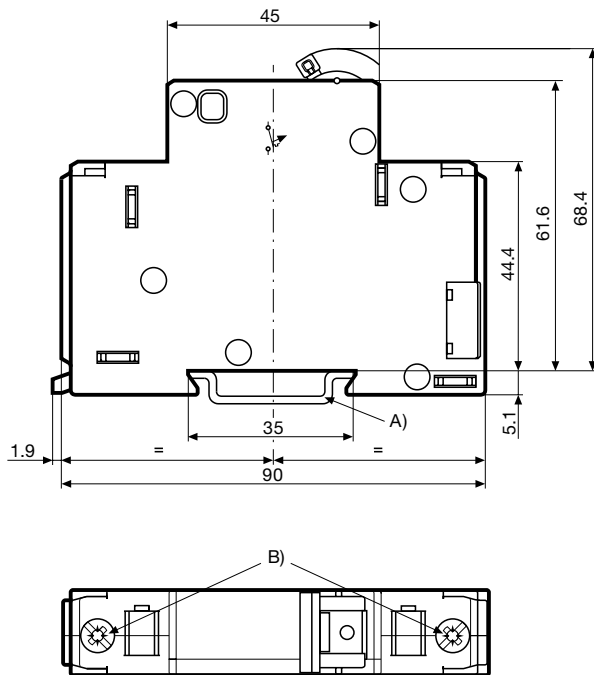
#### Add-on modules

##### Add-on modules

Technical data for the additional module see separate data sheet

Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in [General Product Information](#)

**Dimension**  
AS168X 1 pole

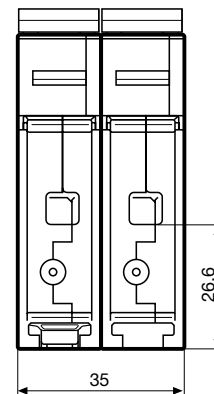
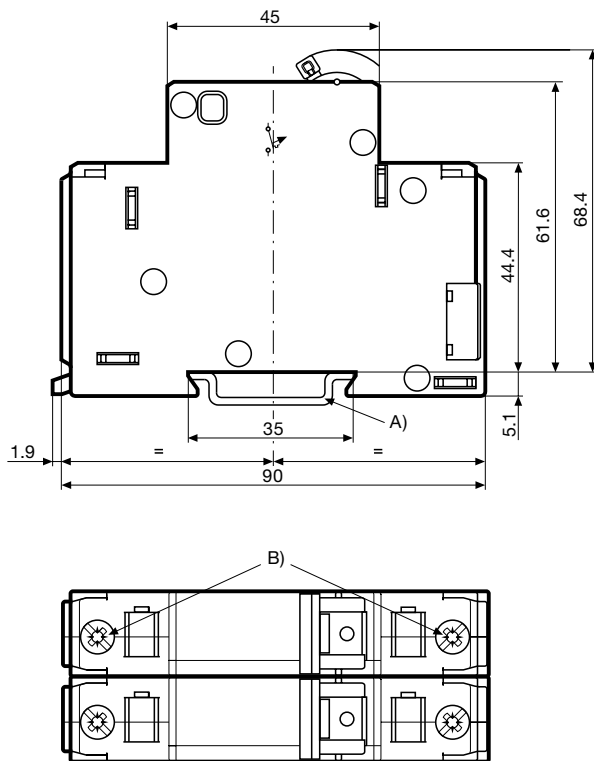


A) 35 mm DIN rail EN 50022

B) Max. torque

| Wire crosssection          | Max. torque     |
|----------------------------|-----------------|
| 1.5 ... 10 mm <sup>2</sup> | 2.5 Nm          |
| 16 ... 25 mm <sup>2</sup>  | 3.1 Nm          |
| AWG #16 ... 8              | 20 ... 22 lb-in |
| AWG #6 ... 4               | 26 ... 28 lb-in |

AS168X 1 pole and switched neutral pole



A) 35 mm DIN rail EN 50022

B) Max. torque

| Wire crosssection          | Max. torque     |
|----------------------------|-----------------|
| 1.5 ... 10 mm <sup>2</sup> | 2.5 Nm          |
| 16 ... 25 mm <sup>2</sup>  | 3.1 Nm          |
| AWG #16 ... 8              | 20 ... 22 lb-in |
| AWG #6 ... 4               | 26 ... 28 lb-in |

Diagrams

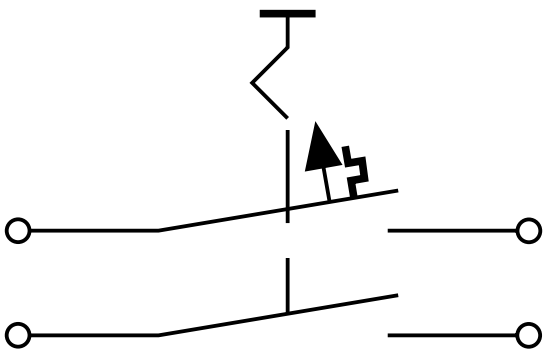
AS168X-CB1...



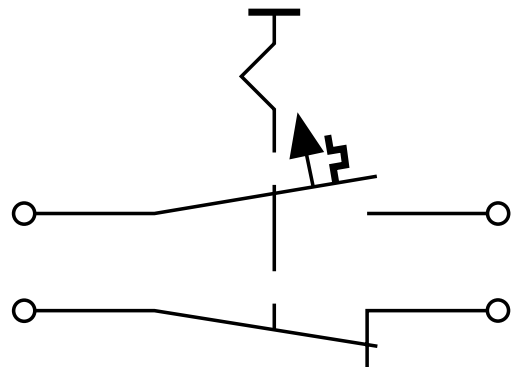
AS168X-CB1...N



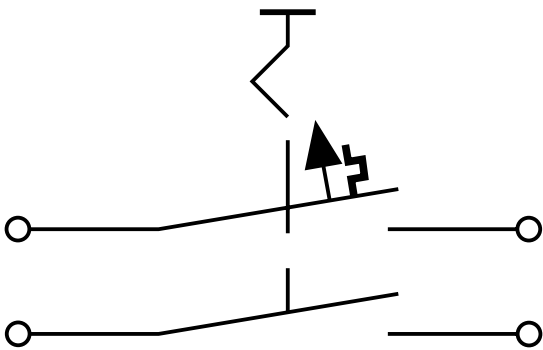
AS168X-CB1... / AS168X-ACBH1



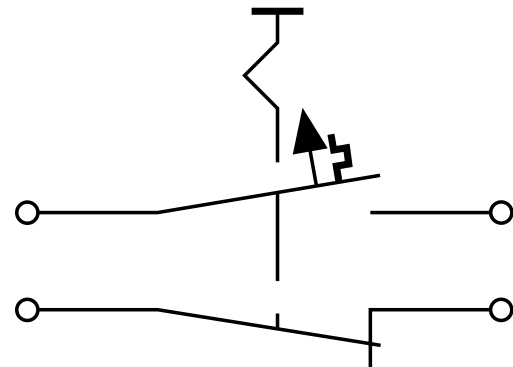
AS168X-CB1... / AS168X-ACBH2



AS168X-CB1... / AS168X-ACBS1







AS168X-CB1... / AS168X-ACBS2



AS168X-CB1... / AS168X-ACBA



| Symbol   | Standard                   | Rated current | Rated voltage AC | Conditional short circuit capacity I <sub>cn</sub> | Rated voltage DC | Conditional short circuit capacity I <sub>cn</sub> |
|--|----------------------------|---------------|------------------|--|------------------|--|
|  | UL 508<br>CSA C22.2 no. 14 | 0.5 - 52 A    | 277 V            | 5 kA   | -                | -  |
|  | UL 1077                    | 0.5 - 40 A    | 240 V            | 10 kA  | -                | -  |
|  | CSA C22.2 no. 235          | 0.5 - 50 A    | 277 V<br>125 V   | 5 kA<br>10 kA                                      | 65 V             | 2 kA   |
|  | EN 60934                   | 0.5 - 30 A    | 240 V            | 4.5 kA   | 65 V             | 4.5 kA   |
|  | GB 17701                   | -             | -                | -  | -                | -  |

### Effect of ambient temperature

AC-breaker are calibrated for an ambient temperature of +40°C, DC-breakers for +23°C. To determine the rated current for a lower or higher ambient temperature, use a correction factor from the table below:

| Ambient temperature [°C] | Correction factor AC version | Correction factor DC version |
|--------------------------|------------------------------|------------------------------|
| -20                      | 0.78                         | 0.80                         |
| -5                       | 0.82                         | 0.87                         |
| 0                        | 0.83                         | 0.90                         |
| +10                      | 0.87                         | 0.95                         |
| +23                      | 0.91                         | 1.00                         |
| +30                      | 0.95                         | 1.05                         |
| +40                      | 1.00                         | 1.10                         |
| +50                      | 1.05                         | 1.20                         |
| +60                      | 1.11                         | 1.30                         |

Example DC version: Rated current = 10 A; Environmental temperature = 50 °C; --> Correction factor = 1.2; Resulting current = 12 A

Ampere-Horsepower

| AS168X-CB                      | Motor Nameplate |                         | Horsepower<br>(FLA & LRC Ratings Apply where no HP Rating is given) |       |       |         |       |        |         |         |
|--------------------------------|-----------------|-------------------------|---|-------|-------|---------|-------|--------|---------|---------|
|                                |                 |                         | Nominal Circuit Voltage, VAC  |       |       |         |       |        |         |         |
|                                |                 |                         | 110-120   | 200   | 208   | 220-240 | 265   | 277    | 380-415 | 440-480 |
| Rated Current<br>(See Note #1) | FLA Rating      | Starting/<br>LRC Rating |   |       |       |         |       | 1 pole |         | 2 pole  |
| 0.5A                           | 0.5A            | 3°                      |   |       |       |         |       |        |         |         |
| 1A                             | 1A              | 6°                      |   |       |       |         |       |        | 1/10    |         |
| 1.5A                           | 1.5A            | 9°                      |   |       |       | 1/10    | 1/10  | 1/10   | 1/6     |         |
| 2A                             | 2A              | 12A                     |   |       |       | 1/8     | 1/6   | 1/6    | 1/4     |         |
| 3A                             | 3A              | 18A                     | 1/10  | 1/6   | 1/6   | 1/4     | 1/4   | 1/3    | 1/3     | 1/2     |
| 4A                             | 4A              | 24A                     | 1/8   | 1/4   | 1/3   | 1/3     | 1/3   | 1/3    | 1/2     | 1       |
| 5A                             | 5A              | 30A                     | 1/6   | 1/3   | 1/3   | 1/2     | 1/2   | 1/2    | 3/4     | 1 1/2   |
| 6A                             | 6A              | 36A                     | 1/4   | 1/2   | 1/2   | 1/2     | 3/4   | 3/4    | 1       | 2       |
| 7A                             | 7A              | 42A                     | 1/4   | 1/2   | 1/2   | 3/4     | 1     | 1      | 1 1/2   | 2       |
| 8A                             | 8A              | 48A                     | 1/3   | 3/4   | 3/4   | 1       | 1     | 1      | 2       | 2       |
| 9A                             | 9A              | 54A                     | 1/3   | 3/4   | 1     | 1       | 1     | 1 1/2  | 2       | 3       |
| 10A                            | 10A             | 60A                     | 1/2   | 1     | 1     | 1 1/2   | 1 1/2 | 2      | 2       | 3       |
| 12A                            | 12A             | 72A                     | 1/2   | 1 1/2 | 1 1/2 | 2       | 2     | 2      | 3       | 3       |
| 13A                            | 13A             | 78A                     | 1/2   | 1 1/2 | 1 1/2 | 2       | 2     | 2      | 3       | 3       |
| 15A                            | 15A             | 90A                     | 3/4   | 2     | 2     | 2       | 3     | 3      | 3       | 5       |
| 16A                            | 16A             | 96A                     | 1   | 2     | 2     | 2       | 3     | 3      | 3       | 5       |
| 18A                            | 18A             | 108A                    | 1   | 2     | 2     | 3       | 3     | 3      | 5       | 5       |
| 20A                            | 20A             | 120A                    | 1 1/2   | 3     | 3     | 3       | 3     | 3      | 5       | 5       |
| 23A                            | 23A             | 138A                    | 1 1/2   | 3     | 3     | 3       | 3     | 3      | 5       | 7 1/2   |
| 25A                            | 25A             | 150A                    | 2   | 3     | 3     | 3       | 5     | 5      | 5       | 7 1/2   |
| 27A                            | 27A             | 162A                    | 2   | 3     | 3     | 3       | 5     | 5      | 7 1/2   | 10      |
| 30A                            | 30A             | 180A                    | 2   | 3     | 3     | 5       | 5     | 5      | 7 1/2   | 10      |

| AS168X-CB                      | Motor Nameplate |                         | Horsepower<br>(FLA & LRC Ratings Apply where no HP Rating is given) |       |       |         |         |         |       |
|--------------------------------|-----------------|-------------------------|---|-------|-------|---------|---------|---------|-------|
|                                |                 |                         | Nominal Circuit Voltage, VAC  |       |       |         |         |         |       |
|                                |                 |                         | 110-120   | 200   | 208   | 220-240 | 380-415 | 440-480 |       |
| Rated Current<br>(See Note #1) | FLA Rating      | Starting/<br>LRC Rating |   |       |       |         |         | 3 pole  |       |
| 0.5A                           | 0.5A            |                         |   |       |       |         |         |         |       |
| 1A                             | 1A              |                         |   |       |       |         |         |         |       |
| 1.5A                           | 1.5A            | 10A                     |   |       |       |         |         | 1/2     | 1/2   |
| 2A                             | 2A              | 12.5A                   |   |       |       |         |         | 3/4     | 3/4   |
| 3A                             | 3A              | 20A                     |   | 1/2   | 1/2   | 1/2     | 1       | 1       | 1 1/2 |
| 4A                             | 4A              | 25A                     |   | 3/4   | 3/4   | 3/4     | 1 1/2   | 2       | 2     |
| 5A                             | 5A              | 32A                     | 1/2   | 1     | 1     | 1       | 2       | 3       | 3     |
| 6A                             | 6A              | 32A                     | 1/2   | 1     | 1     | 1/2     | 2       | 3       | 3     |
| 7A                             | 7A              | 32A                     | 3/4   | 1/2   | 1/2   | 2       | 3       | 3       | 3     |
| 8A                             | 8A              | 46A                     | 3/4   | 2     | 2     | 2       | 3       | 5       | 5     |
| 9A                             | 9A              | 46A                     | 1   | 2     | 2     | 2       | 3       | 5       | 5     |
| 10A                            | 10A             | 46A                     | 1   | 2     | 2     | 3       | 5       | 5       | 5     |
| 12A                            | 12A             | 63.5A                   | 1 1/2   | 3     | 3     | 3       | 5       | 7 1/2   | 7 1/2 |
| 13A                            | 13A             | 63.5A                   | 1 1/2   | 3     | 3     | 3       | 5       | 7 1/2   | 7 1/2 |
| 15A                            | 15A             | 81A                     | 2   | 3     | 3     | 3       | 7 1/2   | 10      | 10    |
| 16A                            | 16A             | 81A                     | 2   | 3     | 3     | 5       | 7 1/2   | 10      | 10    |
| 18A                            | 18A             | 81A                     | 2   | 5     | 5     | 5       | 10      | 10      | 10    |
| 20A                            | 20A             | 81A                     | 3   | 5     | 5     | 5       | 10      | 10      | 10    |
| 23A                            | 23A             | 116A                    | 3   | 5     | 5     | 7 1/2   | 10      | 15      | 15    |
| 25A                            | 25A             | 116A                    | 3   | 5     | 7 1/2 | 7 1/2   | 10      | 15      | 15    |
| 27A                            | 27A             | 145A                    | 3   | 7 1/2 | 7 1/2 | 7 1/2   | 15      | 20      | 20    |
| 30A                            | 30A             | 145A                    | 3   | 7 1/2 | 7 1/2 | 10      | 15      | 20      | 20    |

Note #1: For AC motor circuit nameplate FLA loads, AC general-use loads, AC resistance loads

## Time-Current-Curves

Version F / Magnetic 3-5  $xI_n$



Multiple of Rated Current  $I_n$

Reference Temperature +23°

Version G / Magnetic 6-10  $xI_n$



Multiple of Rated Current  $I_n$

Reference Temperature +23°

Version H / Magnetic 12-20  $xI_n$



Multiple of Rated Current  $I_n$

Reference Temperature +23°

## Config. Code

AS168X-CB 1 DG 200 N

The characters are placeholders for the correspondingly keys of selections from the key tables.

AS168X-CB **1** DG 200 N = Number of Poles

Number of Poles

Configuration key

1-pole

1

AS168X-CB 1 DG 200 N = Tripping characteristics

| Tripping characteristics          | Configuration key |
|-----------------------------------|-------------------|
| 1.0-1.25xIn / 3-5xIn / 0.5-52 A   | F                 |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | G                 |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | H                 |

AS168X-CB 1 DG 200 N = Rated current

| Rated current | Configuration key |
|---------------|-------------------|
| 0.05 A        | 005               |
| 1.0 A         | 010               |
| 1.5 A         | 015               |
| 2.0 A         | 020               |
| 3.0 A         | 030               |
| 4.0 A         | 040               |
| 5.0 A         | 050               |
| 6.0 A         | 060               |
| 7.0 A         | 070               |
| 8.0 A         | 080               |
| 9.0 A         | 090               |
| 10.0 A        | 100               |

Other rated currents on request

| Rated current | Configuration key |
|---------------|-------------------|
| 12.0 A        | 120               |
| 15.0 A        | 150               |
| 16.0 A        | 160               |
| 18.0 A        | 180               |
| 20.0 A        | 200               |
| 23.0 A        | 230               |
| 25.0 A        | 250               |
| 27.0 A        | 270               |
| 30.0 A        | 300               |
| 32.0 A        | 320               |
| 35.0 A        | 350               |
| 40.0 A        | 400               |
| 45.0 A        | 450               |
| 50.0 A        | 500               |
| 52.0 A        | 520               |

Other rated currents on request

AS168X-CB 1 DG 200 N = Switched neutral

| Switched neutral      | Configuration key |
|-----------------------|-------------------|
| Switched neutral pole | N                 |

Variants

| Tripping characteristics          | Rated current | Switched neutral      | Config. Code    | Order Number |
|-----------------------------------|---------------|-----------------------|-----------------|--------------|
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 1.0 A         |                       | AS168X-CB1G010  | 4420.0206    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 2.0 A         |                       | AS168X-CB1G020  | 4420.0230    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 3.0 A         |                       | AS168X-CB1G030  | 4420.0229    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 3.0 A         | Switched neutral pole | AS168X-CB1G030N | 4420.0973    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 4.0 A         |                       | AS168X-CB1G040  | 4420.0231    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 5.0 A         |                       | AS168X-CB1G050  | 4420.0202    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 6.0 A         |                       | AS168X-CB1G060  | 4420.0201    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 7.0 A         |                       | AS168X-CB1G070  | 4420.0329    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 8.0 A         |                       | AS168X-CB1G080  | 4420.0228    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 10.0 A        |                       | AS168X-CB1G100  | 4420.0261    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 10.0 A        | Switched neutral pole | AS168X-CB1G100N | 4420.0512    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 12.0 A        |                       | AS168X-CB1G120  | 4420.0597    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 15.0 A        |                       | AS168X-CB1G150  | 4420.0248    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 16.0 A        |                       | AS168X-CB1G160  | 4420.0260    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 20.0 A        |                       | AS168X-CB1G200  | 4420.0262    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 25.0 A        |                       | AS168X-CB1G250  | 4420.0232    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 30.0 A        |                       | AS168X-CB1G300  | 4420.0233    |
| 1.0-1.25xIn / 6-10xIn / 0.5-52 A  | 35.0 A        |                       | AS168X-CB1G350  | 4420.0839    |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 1.0 A         |                       | AS168X-CB1H010  | 4420.0595    |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 3.0 A         |                       | AS168X-CB1H030  | 4420.0694    |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 4.0 A         |                       | AS168X-CB1H040  | 4420.0173    |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 6.0 A         |                       | AS168X-CB1H060  | 4420.0596    |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 8.0 A         |                       | AS168X-CB1H080  | 4420.0714    |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 10.0 A        |                       | AS168X-CB1H100  | 4420.0572    |



| Tripping characteristics          | Rated current | Switched neutral | Config. Code   | Order Number |
|-----------------------------------|---------------|------------------|----------------|--------------|
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 15.0 A        |                  | AS168X-CB1H150 | 4420.0675    |
| 1.0-1.25xIn / 12-20xIn / 0.5-52 A | 16.0 A        |                  | AS168X-CB1H160 | 4420.0768    |

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